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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,630	04/27/2001	Kazuo Nishiyama	075834.00074	9204
33448	7590	05/31/2007	EXAMINER	
ROBERT J. DEPKE LEWIS T. STEADMAN ROCKEY, DEPKE, LYONS AND KITZINGER, LLC SUITE 5450 SEARS TOWER CHICAGO, IL 60606-6306			MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER
			2813	
			MAIL DATE	DELIVERY MODE
			05/31/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/843,630	NISHIYAMA, KAZUO	
	<b>Examiner</b>	<b>Art Unit</b>	
	James M. Mitchell	2813	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4,8,9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4,8,9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/22/07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is in response to applicant's amendment filed February 13, 2007.

#### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on February 22, 2007 filed after the mailing date of the Office Action on November 13, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.<sup>1</sup>

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S. 6,271,469) in combination with Jiang et al. (U.S. 6,825,569) and Dando (U.S. 5,863,813).

Ma (e.g. Fig. 1J, 6e) discloses:

(cl. 4, 8) an intermediate semiconductor device fabrication structure. A pseudo wafer comprising: a plurality of electronic non-defective<sup>2</sup> same or different electronic chip

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<sup>1</sup> Daniel Bestor indicated to Examiner that the IDS submitted February 13, 2007 was incomplete and misnumbered, and that the sole reference to Wolfe on the IDS filed February 22, 2007 was the only reference to be considered.

<sup>2</sup> [E]very patent is presumed valid (35 U.S.C. 282), and... that presumption includes the presumption of operability. See M.P.E.P 716.07.

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components (102), each having all electrodes (108) formed on one surface thereof, side walls thereof being covered with a protective material (112), and wherein an insulating film (118) is formed over one surface of the chip where all the electrodes are formed and a passivation film (126) is formed over the insulating film and further wherein the protective material on the side walls and a surface of the chip opposite the surface where the electrodes are at a common level (Fig. 6e), and wherein solder bump (138) is formed on each of said electrodes, there being no electrical conductors on a side of the chip opposite the side where all the electrodes are formed;

(cl. 9) with solder bumps (138) formed above and therefore on the electrodes.

Ma does not appear to disclose flux formed on the electrodes or use of a dicing sheet secured to back of chips.

However, Jiang teaches applying a flux to an electrode (Col. 1, Lines 65-67).

It would have been obvious to one of ordinary skill in the art to apply a flux to the electrode of Ma in order to provide solder bonding as taught by Jiang (Col. 1, Lines 65-67).

Neither Ma nor Jiang appear to teach use of a dicing sheet, but Dando (e.g. Fig. 7-8) teaches a dicing sheet (14) for singulation secured to back of chips.

It would have been obvious to one of ordinary in the art to incorporate the use of a dicing tape along the modified chips of Ma in order to provide singulation as required by Ma (Col. 7, Lines 39-42).

With respect the process limitation of claim 4 of a "surface grinded ...or polished," pre-testing or "at least two of the plurality of chip components are not from a same semiconductor wafer [different types ]," the prior art forms the same structure as claimed. [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S. 6,271,469), Jiang et al. (U.S. 6,825,569) and Dando (U.S. 5,863,813) as applied to claim 4 and 8 and further in combination with Furukawa et al. (U.S. 6,452,265).

Neither Ma, Jiang nor Dando explicitly disclose that its chips are of a different type.

However, Furukawa discloses chips of different types (Col. 1, Lines 39-44).

It would have been obvious to one of ordinary skill in the art to form the modified chips of Ma of different types in order to provide multi-chip modules as taught by Furukawa (Col. 1, Lines 34-44).

Moreover, Ma's broad disclosure of die/ chip encompasses application of his invention to any type of die including the same or different types.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ex. Mitchell, J.D.  
May 11, 2007

Wael Fahmy  
SPE 2814